

REMARKS

In view of the above amendments and the following remarks, further examination and reconsideration of the rejection in the Office Action dated February 24, 2009 are requested.

By this amendment, claims 1, 8, and 9 are amended and new claims 19-22 are added. Thus, claims 1-22 are now pending in the application.

Applicants thank the Examiner for the indication of allowable subject matter in claims 8 and 9 in item 5 of the Office Action.

In items 3 and 4 of the Office Action, claims 1-7 and 10-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Soulier (US 5,394,141). Claims 1-7 and 10-16 have been amended to overcome the rejection. Thus, the rejection is inapplicable for the reasons below, and withdrawal of the rejection is respectfully requested.

Claim 1 recites a transmission device comprising:

receiver means for receiving the electrical and/or electromagnetic signal, the receiver means being situated in a vicinity of the other one or both of the first point and the second point, the receiver means having:

a first electrical contact point with a tubular element; and

a second electrical contact point with a cable, the second electrical contact point of the receiver means being electrically separated from the first electrical contact point of the receiver means such that the receiver means can detect a voltage between the first electrical contact point of the receiver means and the second electrical contact point of the receiver means.

Such a receiver means is not disclosed by Soulier.

Soulier discloses a receiver having a first electrical contact point with the tubular element (*Soulier* Figure 7), and a second electrical contact point with the ground. Even if a second contact point on cable 34 is taken to be indirectly connected to receiver 9 through tubing 35 and collar 36, such a second electrical contact point would not be electrically separated from the first electrical contact point; the two points are directly connected via metal tubing 35 and collar 37. Further, since only a single line connects the receiver means to the first electrical contact point and the second electrical contact point (via tubing 35 and collar 37), the receiver means would not be able to detect a voltage between the first electrical contact point of the receiver means and

the second electrical contact point of the receiver means. Thus, Soulier does not disclose receiver means as recited in claim 1.

Claim 21 recites a transmission device comprising:

a single-strand smooth cable for supporting an action and/or measurement assembly, said cable having a breaking strength greater than 300 daN, being made of an electrically conductive material, and being disposed in the tubular element between the first point and the second point, wherein a surface of said cable is electrically insulated, at least in part, from the tubular element; wherein the cable does not comprise a mechanical reinforcement jacket.

As described in the first paragraph on page 7 of the originally filed specification, the cable of the present invention does not comprise additional mechanical reinforcement means, but is a single-strand wire. Mechanical reinforcement is unnecessary because the cable is already for supporting an action and/or measurement assembly, and thus has good mechanical properties itself. Such a cable is not disclosed in Soulier.

Soulier discloses a continuous metal jacket 29 or protective tube 38 enclosing the cable (*Soulier* Figure 5, Figure 8; column 6, lines 59-63 and column 8, lines 15-18) because the wire conductor has a high electrical conductivity, but not sufficient mechanical strength to support the transmitter by itself. This stands in contrast to the recitation in claim 21.

On page 2 of the Office Action, the Examiner indicates that the single-strand smooth cable is disclosed by unit 24 in Figure 4 or by unit 17 in Figure 6. Neither of these units discloses the single-strand smooth cable recited in claims 1 and 21.

The drill string 17 is a section of metal pipework (*Soulier* column 5, lines 59-61). A “pipe” is not a “cable” in the ordinary meanings of the terms. Further, the drill string 17 is not disclosed as having the properties recited for the cable, such as a surface being electrically insulated, at least in part, from the tubular element. Thus, it is submitted that the drill string 17 does not disclose the cable as recited in claim 21.

The handling cable 24 is described at column 6, lines 34-37 of *Soulier*. Soulier does not disclose that the handling cable 24 is made of an electrically conductive material, nor was any portion of *Soulier* cited in the Action as disclosing this. Further, no surface of the handling cable 24 is disclosed as being electrically insulated, at least in part, from the tubular element, nor was any portion of *Soulier* cited in the Action as disclosing this. Thus, it is submitted that the

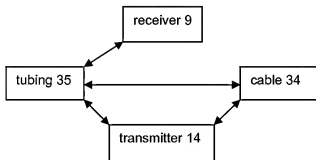
handling cable 24 also does not disclose the cable as recited in claim 21.

Accordingly, it is submitted that the items cited in the Action do not disclose a cable as recited in claims 1 and 21.

On page 3 of the Office Action, it is indicated that the transmitter means and the receiver means recited in claim 1 are disclosed in Figure 7 of Soulier, respectively, by unit 14 and unit 9, i.e., by transmitter 14 and transceiver 9. However, Figure 7 does not disclose the elements recited in claim 1 and 21, arranged as recited in claims 1 and 21.

First, Figure 7 discloses a transmitter connected to tubing 35, i.e. the tubular element, but *not* to cable 34. The Examiner indicates in the remarks on page 1 of the Action that “connected” has been interpreted as an indirect connection. As noted by the Examiner, there is no direct connection between the transceiver 9 and the cable 34 disclosed in Soulier. However, there is also no indirect connection.

As disclosed in Figure 7 and at column 7, line 60 to column 8, line 1 of Soulier, the transmitter 14 is connected to the tubing 35 at a collar 36, and connected to the cable 34 which is connected to the tubing 35 through a collar 37. Thus, Soulier discloses the arrangement shown below.



The tubing 35, i.e. the tubular element, is a recited element in claims 1 and 21. So, a disclosure that the receiver 9 is connected to the tubing 35 which is connected to the cable 34 is *not* a disclosure that the receiver 9 is connected to the cable 34. The Examiner has improperly interposed another claim element between the receiver 9 and the cable 34 in a manner contrary to the recitation in the claims. To construe the claim language in this manner is not to read the limitation broadly, but rather to vitiate the limitation completely.

Accordingly, this is not a disclosure of the claim elements as recited in claim 1 and 21, arranged as recited in claims 1 and 21.

Second, as recited in claims 1 and 21, the cable is disposed in the tubular element between a first point at the surface of the ground and a second point within the cavity. The cable 34 is disposed between pole P1 and pole P2. There is no disclosure in Soulier that the pole P1 is at the surface of the ground.

Soulier discloses that the dipole (i.e., the section between points P1 and P2) is preferably longer than 9 meters, or more preferably longer than 27 meters (*Soulier* column 4, lines 2-6). However, a typical oil drilling application of Soulier has a depth of between 2000 meters and more than 4000 meters (*Soulier* column 2, lines 65-68); thus there is no disclosure or expectation that the pole P1 would be at the surface of the ground. In fact, Soulier discloses just the opposite; Soulier discloses that the upper pole is preferably separated a substantial distance from the surface of the earth (*Soulier* column 4, lines 7 and 8). Thus, the cable 34 of Figure 7 does not disclose the cable as recited in claims 1 and 21.

Finally, on page 3 of the Office Action, the Examiner indicates that Figure 7 and column 6, lines 45-68 disclose that the cable is a portion of a loop for conveying the electrical and/or electromagnetic signal between the transmitter means and the receiver means. This is respectfully traversed for the following reasons.

Preliminarily, it is noted that the embodiment of Soulier described at column 6, lines 45-68 is depicted in Figures 4 and 5; the embodiment of Figure 7 is a different embodiment. The reference numeral 34 (indicating the cable in Figure 7) does not appear in column 6, lines 45-68 of the specification. There is no disclosure in Soulier that the description in the specification at column 6, lines 45-68 applies to cable 34 in Figure 7, nor was any such disclosure indicated in the Action.

Regarding Figure 7, the cable 34 in Figure 7 does not disclose a cable as recited in claims 1 and 21, as discussed above. Thus, Figure 7 cannot disclose that the cable recited in claims 1 and 21 is a portion of a loop for conveying the electrical and/or electromagnetic signal between the transmitter means and the receiver means.

Regarding column 6, lines 45-68 of the specification, the Examiner has not identified any particular cable in the cited portion of the specification as disclosing a cable for supporting an

action and/or measurement assembly which is a portion of a loop for conveying the electrical and/or electromagnetic signal between the transmitter means and the receiver means. However, no possible identification discloses a cable as recited in claims 1 and 21.

First, the receiver 9 is not depicted in Figures 4 and 5, and not discussed in column 6, lines 27-68 describing the embodiment depicted in Figures 4 and 5. Thus, while there is an electrical connection disclosed between the conductor cable 20 and extension cable 22, there is no disclosure that any cable depicted in Figures 4 and 5, or discussed at column 6, lines 27-68, is connected to the receiver 9.

Second, there is no disclosure *anywhere* in Soulier that the receiver 9 is connected to a cable for supporting an action and/or measurement assembly which is a portion of a loop for conveying the electrical and/or electromagnetic signal between the transmitter means and the receiver means. Claims 1 and 21 do not merely recite that the cable is electrically connected to the transmitter, but that the cable is a portion of a loop for conveying the electrical and/or electromagnetic signal transmitted from the transmitter means to the receiver means. The reason that no figure in Soulier depicts a receiver connected to a cable for supporting an action and/or measurement assembly is that the cable in Soulier is *not* a portion of a loop for conveying the electrical and/or electromagnetic signal between the transmitter means and the receiver means.

As depicted in Figures 2, 3, and 5-7, the transmitter 14 applies a voltage between two poles P1 and P2 on the drill string or tubing. As illustrated in schematic Figures 9-11, and described at column 3, lines 47-53 and column 8, lines 37-53, the transmitter 14 of Soulier is connected between two widely spaced points on the drill string or tubing. The lower end of the drill string effectively goes to ground; the upper end of the drill string is where the signal is detected.

Accordingly, Figures 1 and 7 only depict, and the specification at column 2, lines 41-45 column 3, lines 44-47 only describes, a receiver connected between ground and the metal pipework, i.e. the tubular element. Thus, there is no disclosure in Soulier that the receiver is ever connected to the cable for supporting the action and/or measurement assembly.

Thus, it is believed apparent that Soulier does not disclose receiver means or a single-strand smooth cable as recited in claims 1 and 21. Accordingly, it is believed that claims 1 and 21 are allowable over the prior art of record, as are claims 2-7, 10-20, and 22 depending

therefrom.

Claims 8 and 9 have been amended only to contain all the limitations of their base claim and intervening claim.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is earnestly solicited.

If, after reviewing this Amendment, the Examiner feels that there are any issues remaining which must be resolved before the application can be passed to issue, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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/Aldo A. D'Ottavio/

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